BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#24
3/21/03

Serial No. 09/393,482 Group Art Unit No. 3677

Filing Date: September 10, 1999 Examiner: Carlos Lugo

Inventor: Jerry Chisnell

Title: REINFORCEMENT FOR A HOSE COUPLING

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Appeal Brief under 37 CFR §1.192

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This is an Appeal of the Examiner's final rejection dated October 1, 2002, Paper No. 20, and the subsequently issued Advisory Action dated December 27, 2002, Paper No. 22. This brief is being filed in triplicate with the associated fee under 37 CFR §1.17(c) in the amount of $320.00. All applicable extension of time fees were previously paid. If any further fee is deemed to be due, the Commissioner is hereby authorized to charge same to the undersigned's Deposit Account No. 22-0212.

REAL PARTY IN INTEREST

The real party in interest is Automotive Fluid Systems, Inc. as the assignee in this application.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect or be affected by or have a bearing on the Board's decision in this Appeal.

STATUS OF THE CLAIMS

The status of the Claims as determined by the Examiner in the Final Office Action dated October 1, 2002, Paper No. 20, is as follows:

a) Claims 1-12 are pending in this application;

b) Claims 6-10 are allowed; and

c) Claims 1-5, 11 and 12 are rejected.

STATUS OF AMENDMENTS

A reply to the Examiner's final rejection was filed on December 2, 2002 requesting the Examiner's reconsideration of the final claim rejections under 35 U.S.C. §102. In an Advisory Action dated December 27, 2002, Paper No. 22, the Examiner continued the 35 U.S.C. §102 rejection of Claims 1-5, 11 and 12. As the Advisory Action of December 27, 2002 did not indicate whether or not Appellant's reply would be entered for purposes of Appeal, and there were no concisely expressed reasons for non-entry as required by MPEP 714.13, it will be assumed that Appellant's reply has been entered for purposes of Appeal.

SUMMARY OF THE INVENTION

Appellant's invention generally discloses a compact reinforcing ring (20) to be used in a crimped coupling (10) for high-pressure hose connections such as in an automotive air-conditioning system. The coupling (10) has an inner sleeve (40), an outer sleeve (60) coaxial with the inner sleeve (40), and a hose (30) coaxially inserted therebetween. The outer sleeve (60) has at least one depression (66) defining an area of peak crimp force of a predetermined longitudinal extent, while the inner sleeve (40) has at least one projection (46) for axially locking the hose (30) between the inner sleeve (40) and outer sleeve (60). The depression (66) in the outer sleeve (60) is formed by a

crimping method that ordinarily would narrow or collapse the inner sleeve (40). However, the reinforcing ring (20) is disposed in the inner sleeve (40) and positioned within the predetermined longitudinal extent defined by the area of peak crimp force exerted by the crimping method, such that the reinforcing ring (20) provides localized support to resist collapse of the inner sleeve (40).

By analyzing failed prior art couplings, where the inner sleeve (40) has collapsed from crimp forces, the Appellant can predict the exact area of the inner sleeve (40) that will fail for each individual design. Accordingly, the reinforcing ring (20) is strategically located concentric with the predicted area of failure to reinforce the inner sleeve (40) during the crimping operation. The reinforcing ring (20) resists the peak pressure from the crimping force and thus prevents damage to the inner sleeve (40) from occurring, thereby improving the integrity and long-term durability of the coupling (10).

Prior art reinforcements are longer than necessary and do not provide localized support, and because of their excessive length undergo beam deflection during the crimping operation. The reinforcing ring (20) of the present invention provides more rigid reinforcement because it is discrete, strategically located only where absolutely necessary, and thereby undergoes virtually no beam deflection. Additionally, the reinforcing ring (20) is smaller and lighter than prior art reinforcements and accordingly will be less expensive.

ISSUES

The issue to be resolved in this appeal are as follows:

1. Are Claims 1-5, 11 and 12 finally rejected under 35 U.S.C. §102(b) unpatentable as being anticipated by Joseph et al., U.S. Patent 5,387,016.

GROUPING OF THE CLAIMS

For each ground of rejection that applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand or fall together.

ARGUMENT

The Rejection of Claims 1-5, 11 and 12 under 35 U.S.C. §102(b) is Improper as a Matter of Law and Issue 1 Should be Resolved in Appellant's Favor

The Examiner rejected independent Claims 1, 11 and 12 and dependent Claims 2-5 under 35 U.S.C. §102(b) as being anticipated by Joseph et al., U.S. Patent 5,387,016. The undersigned attorney respectfully traverses the Examiner's rejection under 35 U.S.C. §102(b) in view of the following argument.

The test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. §102 is whether the reference discloses all the elements of the claimed combination, or the mechanical equivalents, functioning in substantially the same way to produce substantially the same results. As most recently noted by the Court of Appeals of the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick*, 221 USPQ 481, 485 (1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. §102, the Court stated:

> "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim."

Appellant's independent Claim 1 requires:

"1. A reinforced hose coupling defining an area of peak crimp force of a predetermined longitudinal extent, said reinforced hose coupling comprising:

an inner sleeve having a first end, a second end opposite said first end, and a pair of annular upset beads therebetween, said inner sleeve further having an inner diameter and an outer diameter thereon, said outer diameter having at least one projection thereon;

a hose having an inner diameter positioned over said outer diameter of said inner sleeve, said at least one projection of said inner sleeve interlocking with said hose to resist axial movement of said hose relative to said reinforced hose coupling;

an outer sleeve having a terminating end sandwiched between said pair of annular upset beads of said inner sleeve to prevent axial movement relative to said inner sleeve, said outer sleeve further having an inner diameter circumscribing said hose, **said inner diameter of said outer sleeve further including at least one depression therein formed by a crimping operation, said at least one depression defining an area of peak crimp force of a predetermined longitudinal extent** and interlocking with said hose to further resist axial movement of said hose relative to said reinforced hose coupling; and

at least one reinforcing ring positioned within said inner diameter of said inner sleeve within said predetermined longitudinal extent defined by said area of peak crimp force, whereby said at least one reinforcing ring provides localized support along said predetermined longitudinal extent to resist deformation of said inner sleeve during said crimping operation."

Appellant's independent Claim 11 requires:

"11. A reinforced hose coupling defining an area of peak crimp force of a predetermined longitudinal extent, said reinforced hose coupling comprising:

a hose having an outer diameter and an inner diameter;

an outer sleeve having an inner diameter circumscribing said outer diameter of said hose, **said outer sleeve further having a plurality of depressions therein, said plurality of depressions defining an area of peak crimp force of a predetermined longitudinal extent** and interlocking with said hose to resist axial movement of said hose relative to said outer sleeve;

an inner sleeve having an inner diameter and an outer diameter, said inner sleeve being adapted to be inserted into said inner diameter of said hose said inner sleeve having at least one projection interlocking with said hose to resist axial movement of said hose relative to said inner sleeve; and

at least one reinforcing ring situated within said inner diameter of said inner sleeve, within said predetermined longitudinal extent defined by said area of peak crimp force, whereby said at least one reinforcing ring provides localized support along said predetermined longitudinal extent to resist deformation of said inner sleeve."

Appellant's independent Claim 12 requires:

"12. A reinforced hose coupling defining an area of peak crimp force of a predetermined longitudinal extent, said reinforced hose coupling comprising:

a hose having an outer diameter and an inner diameter;

an outer sleeve having an inner diameter circumscribing said outer diameter of said hose, **said outer sleeve further having at least one depression therein, said at least one depression defining an area of peak crimp force of a predetermined longitudinal extent** and interlocking with said hose to resist axial movement of said hose relative to said outer sleeve;

an inner sleeve having an inner diameter and an outer diameter, said inner sleeve being adapted to be inserted into said inner diameter of said hose said inner sleeve having at least one projection interlocking with said hose to resist axial movement of said hose relative to said inner sleeve; and

at least one reinforcing ring situated within said inner diameter of said inner sleeve, within said predetermined longitudinal extent defined by said area of peak crimp force, whereby said at least one reinforcing ring provides localized support along said predetermined longitudinal extent to resist deformation of said inner sleeve."

Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick, supra, makes clear that anticipation requires the presence in a single prior art reference disclosure of **each and every element of the claimed invention, arranged as in the**

claim. It is respectfully suggested that the Joseph et al. elements allegedly anticipating independent Claims 1, 11 and 12 are not arranged as in Appellant's claims. Specifically, Joseph et al. do not disclose a reinforcing ring positioned within a predetermined longitudinal extent of at least one depression in the outer sleeve defining an area of peak crimp force as required by Appellant's independent Claims 1, 11 and 12. The Examiner alleges that the Joseph et al. tubular liner 28 discloses Appellant's reinforcing ring. While Appellant does not agree with such interpretation, the tubular liner (28) is clearly not structurally arranged as in Appellant's independent Claims 1, 11 and 12, i.e. within a predetermined longitudinal extent of at least one depression in the outer sleeve defining an area of peak crimp force, and therefore cannot anticipate Appellant's invention.

Courts generally recognize a presumption in favor of the ordinary and accustomed meaning of claim terms, *Johnson Worldwide Associates, Inc. v. Zebco Corp.* 175 F.3d at 989, USPQ2d at 1610. Accordingly, Webster's Third New International Dictionary provides the following definitions for the term "within": "inside the bounds of a place or region" and "on the inside or on the inner side: INTERNALLY, INSIDE". This definition leaves no room for ambiguity, if an element is inside the bounds of a region it is within the region, and conversely if the element is outside the bounds of a region it is not within the region. Therefore, the Joseph et al. tubular liner (28) is not "within" a predetermined longitudinal extent defined by an area of peak crimp force because both end portions of the tubular liner (28) extend outside such predetermined longitudinal extent into an area having no crimp force whatsoever. In other words, whether or not a portion of the tubular liner (28) is "within" according to the definition provided by Webster's Third New International Dictionary has no bearing on whether the tubular liner (28) as a whole is "inside the bounds of a place or region".

The above referenced limitation requiring a "reinforcing ring positioned within a predetermined longitudinal extent defined by an area of peak crimp force" must also be read in light of the limitation requiring an outer sleeve element with "at least one depression defining an area of peak crimp force". The combination of these two limitations makes clear that, in order to anticipate Appellant's independent Claims 1, 11 and 12, Joseph et al. must disclose a reinforcing ring element positioned within a predetermined longitudinal extent defined by at least one depression of an outer sleeve element. As pointed out in Appellant's reply filed August 23, 2002 and December 9, 2002, Joseph et al. disclose a tubular liner (28) that supports the entire length of a tubular body to which a crimp force is applied such that the tubular liner (28) necessarily extends beyond the depressions formed by the crimping operation. As the Joseph et al. tubular liner (28) extends beyond the depressions formed by the crimping operation, the tubular liner (28) is not "within" the depressions defining an area of peak crimp force as defined by Webster's Third New International Dictionary cited hereinabove, and as required by each of Appellant's independent Claims 1, 11 and 12.

In response to Appellant's argument included in the reply filed August 23, 2002, and reiterated in the preceding paragraph, the Examiner stated that Figure 3 of the Joseph et al. reference shows the liner is disposed within the depressions (26) (page 3, lines 2-3 of the Final Office Action of October 1, 2002, Paper No. 20). Other than this conclusory statement, the Examiner does not provide any further support for such position. As Figure 3 clearly shows the tubular liner (28) extending beyond the longitudinal extent defined by the depressions (26), it appears the Examiner does not fully appreciate the definition of the term "within". Since the tubular liner (28) extends beyond the longitudinal extent defined by the depressions, the tubular liner (28) is clearly not

"within" such longitudinal extent according to the definition of the term provided by Webster's Third New International Dictionary cited hereinabove.

Additionally, Joseph et al. do not have a reinforcing ring structurally interrelated with a sleeve that provides **localized support** along a predetermined longitudinal extent as required by Appellant's independent Claims 1, 11 and 12. Appellant's independent Claims 1, 11 and 12 clearly set forth a positively recited group of claimed elements interrelated within a defined area of peak crimp force arranged to provide localized support. The tubular lining (28) in Joseph et al. extends throughout the entire length of engagement and does not provide localized support along said predetermined longitudinal extent defined by said area of peak crimp force as clearly set forth in independent Claims 1, 11 and 12.

Therefore, in applying the test for anticipation as set forth in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick*, supra, Joseph et al. do not anticipate independent Claims 1, 11 or 12. Accordingly, withdrawal of the rejection of Claims 1-5, 11 and 12 under 35 U.S.C. §102 is respectfully requested.

The rejection of dependent Claim 2 under 35 U.S.C. §102(b) is not well taken in view of the fact that dependent claims are but further delineations of the structure of the claims from which they depend. Claim 2 requires the combination of elements of the structure as set forth in Claim 1 with the additional limitation that the second end of the inner sleeve is flared.

As clearly shown in the above argument, the Joseph et al. reference fails to disclose each and every element arranged as in independent Claim 1, and accordingly, the additional limitation of Claim 2 is clearly patentably distinct and not anticipated by the disclosure of Joseph et al.

The rejection of dependent Claim 3 under 35 U.S.C. §102(b) is not well taken in view of the fact that dependent claims are but further delineations of the structure of the claims from which they depend. Claim 3 requires the combination of elements of the structure as set forth in Claims 1 and 2, with the additional limitation that the second end of the inner sleeve is received within a second coupling that comprises: a tubular body having an annular upset bead; a cage axially retained by said annular upset bead; and a spring disposed within said cage, said second end of said inner sleeve being retained between said cage and said spring of said second coupling.

As clearly shown in the above argument, the Joseph et al. reference fails to disclose each and every element arranged as in independent Claim 1, and accordingly, the additional limitation of Claim 3 is clearly patentably distinct and not anticipated by the disclosure of Joseph et al.

The rejection of dependent Claim 4 under 35 U.S.C. §102(b) is not well taken in view of the fact that dependent claims are but further delineations of the structure of the claims from which they depend. Claim 4 requires the combination of elements of the structure as set forth in Claim 1 with the additional limitation that the at least one reinforcing ring is made of a rigid material.

As clearly shown in the above argument, the Joseph et al. reference fails to disclose each and every element arranged as in independent Claim 1, and accordingly, the additional limitation of Claim 4 is clearly patentably distinct and not anticipated by the disclosure of Joseph et al.

The rejection of dependent Claim 5 under 35 U.S.C. §102(b) is not well taken in view of the fact that dependent claims are but further delineations of the structure of the claims from which they depend. Claim 5 requires the combination of

elements of the structure as set forth in Claims 1 and 4 with the additional limitation that the at least one reinforcing ring is made of steel.

As clearly shown in the above argument, the Joseph et al. reference fails to disclose each and every element arranged as in independent Claim 1, and accordingly, the additional limitation of Claim 5 is clearly patentably distinct and not anticipated by the disclosure of Joseph et al.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that the rejection of Claims 1-5, 11 and 12 is improper as a matter of fact and law under 35 USC §102(b), and reversal of the final rejection of the claims as appealed is therefore respectfully requested.

An Appendix that contains the claims on appeal, as pending at the time of the final rejection, is enclosed herewith.

Respectfully submitted,

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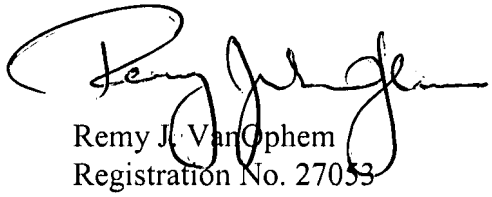

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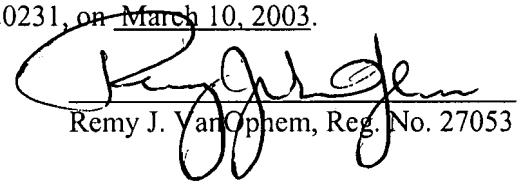
I hereby certify that this correspondence, Appeal Brief, is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on March 10, 2003.

Date: March 10, 2003



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APPENDIX

1. A reinforced hose coupling defining an area of peak crimp force of a predetermined longitudinal extent, said reinforced hose coupling comprising:

an inner sleeve having a first end, a second end opposite said first end, and a pair of annular upset beads therebetween, said inner sleeve further having an inner diameter and an outer diameter thereon, said outer diameter having at least one projection thereon;

a hose having an inner diameter positioned over said outer diameter of said inner sleeve, said at least one projection of said inner sleeve interlocking with said hose to resist axial movement of said hose relative to said reinforced hose coupling;

an outer sleeve having a terminating end sandwiched between said pair of annular upset beads of said inner sleeve to prevent axial movement relative to said inner sleeve, said outer sleeve further having an inner diameter circumscribing said hose, said inner diameter of said outer sleeve further including at least one depression therein formed by a crimping operation, said at least one depression defining an area of peak crimp force of a predetermined longitudinal extent and interlocking with said hose to further resist axial movement of said hose relative to said reinforced hose coupling; and

at least one reinforcing ring positioned within said inner diameter of said inner sleeve within said predetermined longitudinal extent defined by said area of peak crimp force, whereby said at least one reinforcing ring provides localized support along said predetermined longitudinal extent to resist deformation of said inner sleeve during said crimping operation.

2. The reinforced hose coupling according to claim 1, wherein said second end of said inner sleeve is flared.

3. The reinforced hose coupling according to claim 2, wherein said second end of said inner sleeve is received within a second coupling, said second coupling comprising:

a tubular body having an annular upset bead;

a cage axially retained by said annular upset bead; and

a spring disposed within said cage, said second end of said inner sleeve being retained between said cage and said spring of said second coupling.

4. The reinforced hose coupling according to claim 1, wherein said at least one reinforcing ring is made of a rigid material.

5. The reinforced hose coupling according to claim 4, wherein said at least one reinforcing ring is made of steel.

6. A hose coupling having an area of peak crimp force, said hose coupling comprising:

an inner sleeve having a first end, a second end opposite said first end, and a pair of annular upset beads therebetween, said inner sleeve further having an inner diameter and an outer diameter thereon, said inner diameter having at least one groove therein, said outer diameter having at least one projection thereon;

a hose having an inner diameter positioned over said outer diameter of said inner sleeve, wherein said at least one projection of said inner sleeve interlocks with said hose to resist axial movement of said hose relative to said hose coupling;

an outer sleeve having a terminating end sandwiched between said pair of annular upset beads of said inner sleeve, said outer sleeve further having an inner diameter circumscribing said hose, said inner diameter of said outer sleeve further having at least one depression formed by a crimping operation, said at least one depression being concentric with said at least one groove of said inner sleeve, wherein said at least one depression interlocks with said hose to further resist axial movement of said hose relative to said hose coupling; and

a reinforcing ring positioned within said at least one groove in said inner diameter of said inner sleeve and concentric with said area of peak crimp force, whereby said reinforcing ring resists deformation of said inner sleeve during said crimping operation, said reinforcing ring having an inner diameter at least as great as said inner diameter of said inner sleeve, whereby said reinforcing ring permits full cross sectional fluid flow through said hose coupling.

7. The hose coupling according to claim 6, wherein said second end of said inner sleeve is flared.

8. The hose coupling according to claim 7, wherein said second end of said inner sleeve is received within a second coupling, said second coupling comprising:

a tubular body having an annular upset bead;

a cage received within and retained by said annular upset bead; and

a spring disposed within said cage, said second end of said inner sleeve being retained between said cage and said spring of said second coupling.

9. The hose coupling according to claim 6, wherein said reinforcing ring is made of a rigid material.

10. The hose coupling according to claim 9, wherein said reinforcing ring is made of steel.

11. A reinforced hose coupling defining an area of peak crimp force of a predetermined longitudinal extent, said reinforced hose coupling comprising:

a hose having an outer diameter and an inner diameter;

an outer sleeve having an inner diameter circumscribing said outer diameter of said hose, said outer sleeve further having a plurality of depressions therein, said plurality of depressions defining an area of peak crimp force of a predetermined longitudinal extent and interlocking with said hose to resist axial movement of said hose relative to said outer sleeve;

an inner sleeve having an inner diameter and an outer diameter, said inner sleeve being adapted to be inserted into said inner diameter of said hose said inner sleeve having at least one projection interlocking with said hose to resist axial movement of said hose relative to said inner sleeve; and

at least one reinforcing ring situated within said inner diameter of said inner sleeve, within said predetermined longitudinal extent defined by said area of peak crimp force, whereby said at least one reinforcing ring provides localized support along said predetermined longitudinal extent to resist deformation of said inner sleeve.

12. A reinforced hose coupling defining an area of peak crimp force of a predetermined longitudinal extent, said reinforced hose coupling comprising:

a hose having an outer diameter and an inner diameter;

an outer sleeve having an inner diameter circumscribing said outer diameter of said hose, said outer sleeve further having at least one depression therein, said at least one depression defining an area of peak crimp force of a predetermined longitudinal extent and interlocking with said hose to resist axial movement of said hose relative to said outer sleeve;

an inner sleeve having an inner diameter and an outer diameter, said inner sleeve being adapted to be inserted into said inner diameter of said hose said inner sleeve having at least one projection interlocking with said hose to resist axial movement of said hose relative to said inner sleeve; and

at least one reinforcing ring situated within said inner diameter of said inner sleeve, within said predetermined longitudinal extent defined by said area of peak crimp force, whereby said at least one reinforcing ring provides localized support along said predetermined longitudinal extent to resist deformation of said inner sleeve.